Zheyuan Xu

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Education

University of Washington
Master of Science in Computer Science — *Sep 2020 - Dec 2021*

Georgia Institute of Technology
Bachelor of Science in Computer Science and Electrical Engineering — *Aug 2015 – May 2020*

Technical Skills

Programming Languages: Python, C++ (11 or above), C#, SQL, JavaScript, Swift, Java, Matlab, HTML

Frameworks and Tools: CUDA, ROS2/ROS, Linux, Flutter, Flask, RabbitMQ, Docker, Git, CI/CD, MCU

Professional Experience

ADAS/AD Stack Software Engineer — Jan 2022 – Sep 2023
U Power Robotics — *Sunnyvale, CA*

- Pioneered the setup of a simulation pipeline based on Carla and Webots, enabling verification of 3D object and lane detection algorithms and planning stacks.
- Innovated a CUDA-based point cloud ego-motion compensation package for Robosense Lidars, achieving a remarkable 10x reduction in pipeline latency compared to the CPU version.
- Championed the development and maintenance of a ROS2 driver package for Continental Radars and a point cloud clustering package for the perception stack, enabling all-weather close-range obstacle detection.
- Architected a multi-threaded ROS2 mission management package for an autonomous valet parking demo, allowing real-time visualization of high-level mission commands and vehicle statuses on a map, with user-friendly addition and deletion of goal poses and vehicle behaviors through simple mouse interactions.

Machine Learning Intern — Oct 2021 – Dec 2021
Mavenir Systems Inc. — *Richardson, TX*

- Charged with a factory robotics project, developed a cutting-edge YOLO-based ROS package for water bottle detection and motion planning of affordable robotic arms, achieving an impressive success rate exceeding 60%.

Machine Learning Intern — June 2021 – Sep 2021
RATLab LLC (Startup) — *Seattle, WA*

- Led the development of neural network-based algorithms for a consumer electronic product, utilizing Pytorch in Python and deploying on an ARM-based microcontroller with Tensorflow Lite, achieving a remarkable 85%+ classification accuracy in breathing detection.

Research Assistant — Jan 2020 – Aug 2020
GTSR Lab — *Atlanta, GA*

- Conceptualized and designed an ultra-compact mechatronics system for GT-MAB 2.0, leveraging Solidworks and Eagle CAD.
- Optimized firmware to drastically reduce communication latency by over 150 times using embedded C.
- Co-inventor of two patents and co-author of a paper that earned the prestigious "Best Student Paper Award" at AIM 2021.

Selected Projects

GAIA System | *A 3D web app for monitoring natural disasters* — Feb 2021–Apr 2021

- Engineered the frontend using Three.js, HTML, and CSS to enable immersive visualization and rendering of real-time weather information. Utilized GCP BigQuery and RabbitMQ for low-latency data delivery across backend servers.

AdaEye | *A voice-controlled navigation app for the visually impaired* — Feb 2021

- Designed and developed the Swift-based frontend, enabling seamless voice-enabled login and registration. Integrated RabbitMQ on Azure VM to empower voice control of a camera gimbal. Implemented an interactive chatbot powered by OpenAI API and AVFoundation. Recognized with the "Best Use of Google Cloud" award at MakeHarvard 2021.

Neomap | *An iOS mixed-reality app to share your New Year's resolution and relive your older memories* — Dec 2020

- Implemented a groundbreaking gesture comment feature using CoreML gesture detection and ARKit in Swift. Honored with the "Best Use of Google Cloud" award and the "Radar.io Most Creative Award" at MLH New Year New Hack 2021.